

SPECIFICATION

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[0020] Auxiliary engine 13 supplies power to a motor 19 and a pump 21. Motor 19 is preferably a 12-volt motor that receives DC electricity from alternator 17a. Accordingly, in the preferred embodiment, auxiliary engine 13 powers motor 19 through alternator 17a. Motor 19 drives pump 21 to supply oil, or any other acceptable engine lubricant, to auxiliary engine 13. Pump 21 is in fluid communication with auxiliary engine 13 through fluid lines 23. A filter 2325 is fluidly connected to fluid lines 2523 so that filter 2325 is in fluid communication with auxiliary engine 13 and pump 21. Filter 2325 cleanses the oil or lubricant pumped into auxiliary engine 13 with pump 21. Using filter 2325 allows the operator to operate auxiliary engine 13 for longer periods of time between necessary oil changes compared to previous auxiliary engines operating without a pump and oil filter.

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[0023] Condenser 33 is connected by lines to compressor 31 for condensing hot gaseous refrigerant into a liquid. Condenser 33 also has an output line that leads to an evaporator 37. Evaporator 37 includes an expansion valve that reduces the pressure of the refrigerant, causing it to convert to a cold gas. The refrigerant returns from evaporator 37 by a line to compressor 31. An auxiliary heater coil or element 39 is also associated with auxiliary power unit 11. Auxiliary heater 39 is connected by hoses to radiator 15 for receiving a portion of the hot engine coolant running through radiator 15. Valves (not shown) selectively close the coolant flow through heater 39 while it is not operating. In a manner known in the art, an auxiliary interior circulation fan (not shown) circulates air through heater 39, evaporator 37 and the interior cab and sleeping

compartment of the vehicle. The auxiliary interior circulation fan (not shown) is ~~preferable~~preferably driven by an electrical motor powered by alternator 17. Evaporator 37 is preferably mounted adjacent heater element 39 so that air moved by fan 35 flows through evaporator 37 into the interior of the vehicle.

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[0028] As will be appreciated by those skilled in the art, the size of housing 51 can be altered from that shown in Figure 3 for housing motor 19, pump 21 and filter ~~23~~25 as desired. Filter ~~23~~25 can also be located outside of housing 51 for easier accessibility by an operator for filter changes.

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[0031] In both embodiments, alternator 17a provides DC electricity to motor 19. Motor 19 drives pump 21 to supply the engine lubricant to auxiliary engine 13 through fluid lines ~~25~~23. Oil filter ~~23~~25 removes contaminants from the engine lubricant in fluid lines 25 to help extend the operating time between oil changes for auxiliary engine 13.